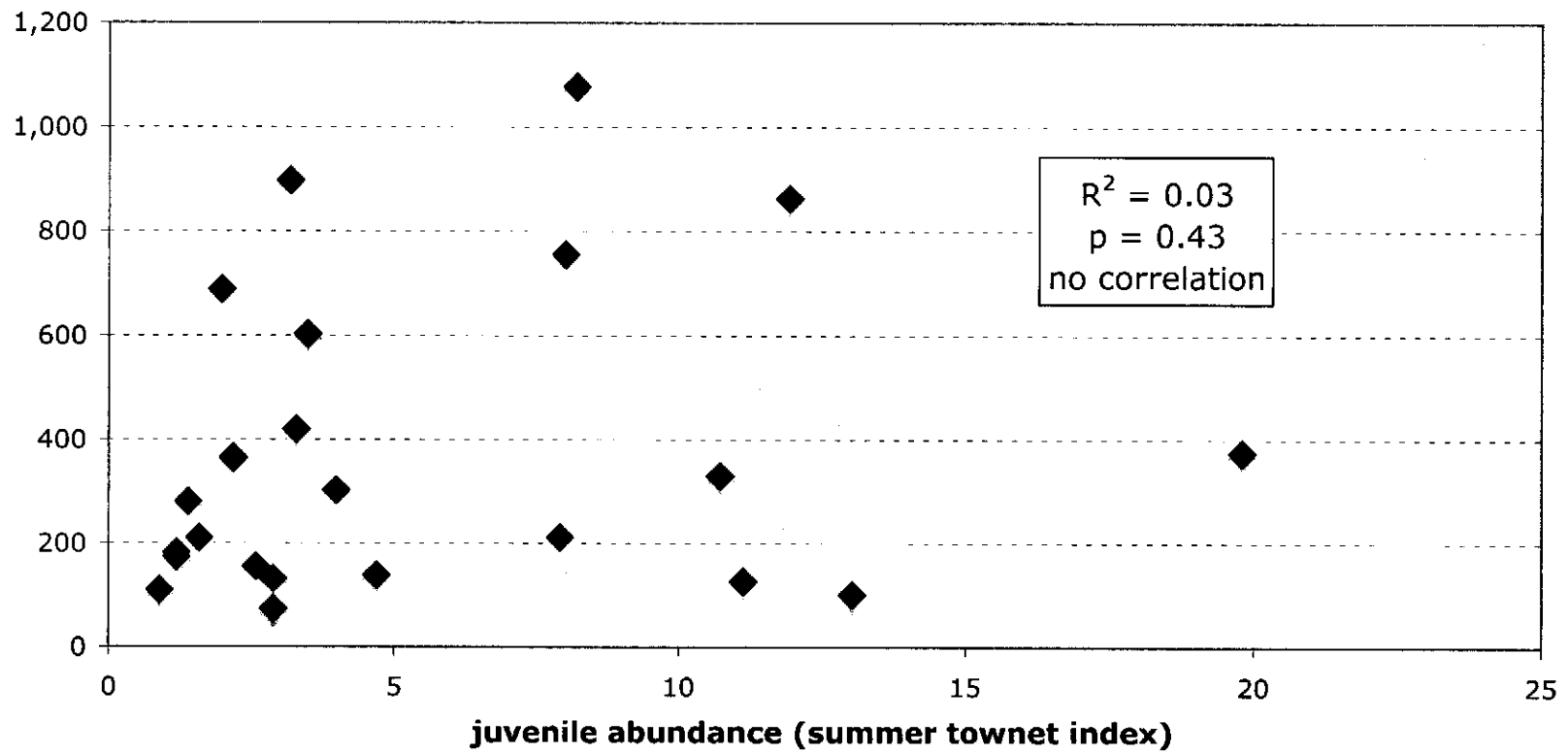
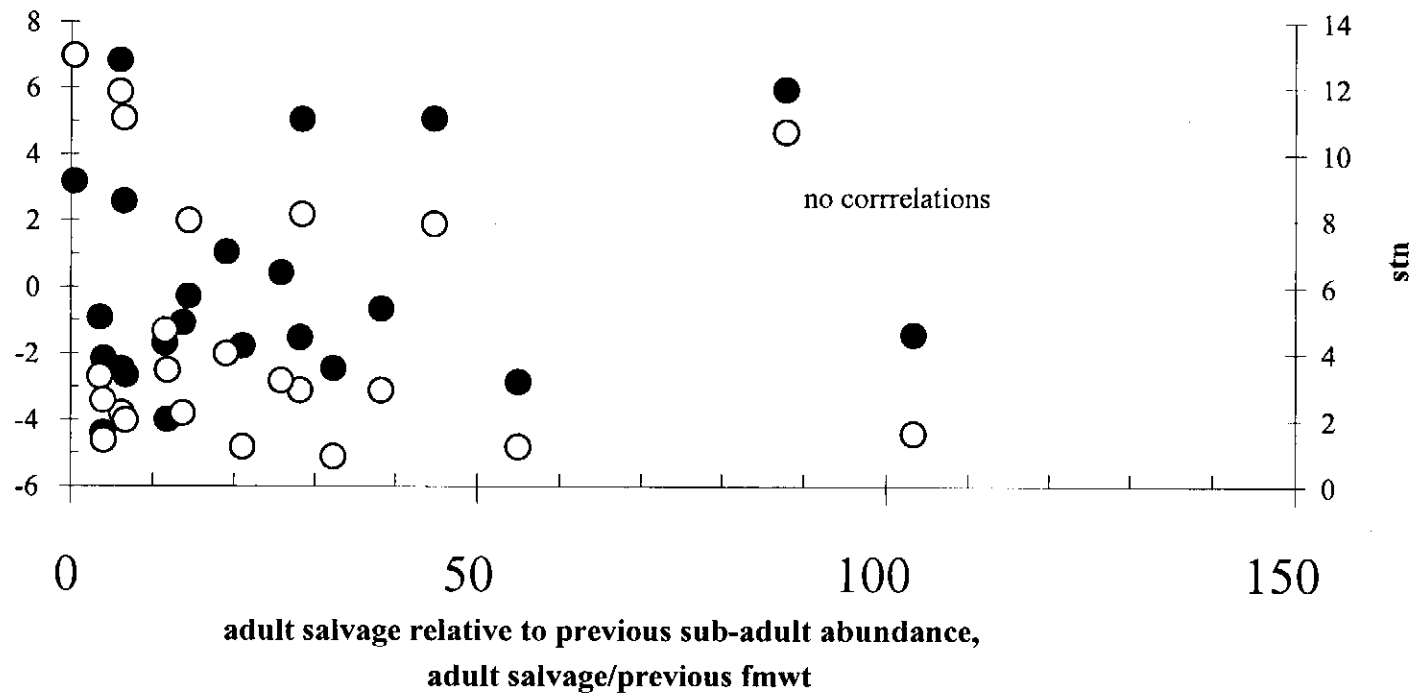


**Relationship between juvenile
and
subsequent sub-adult abundance,**

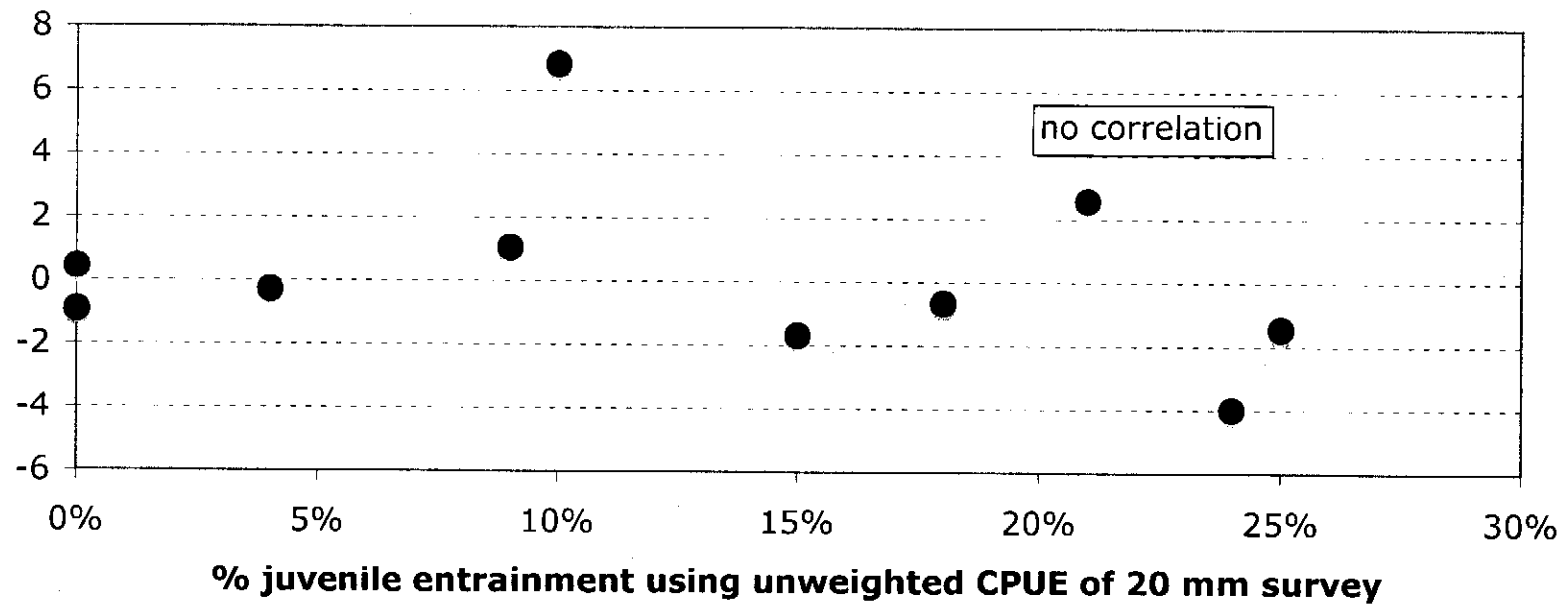


**effect of adult salvage on juvenile abundance
1981-2004**

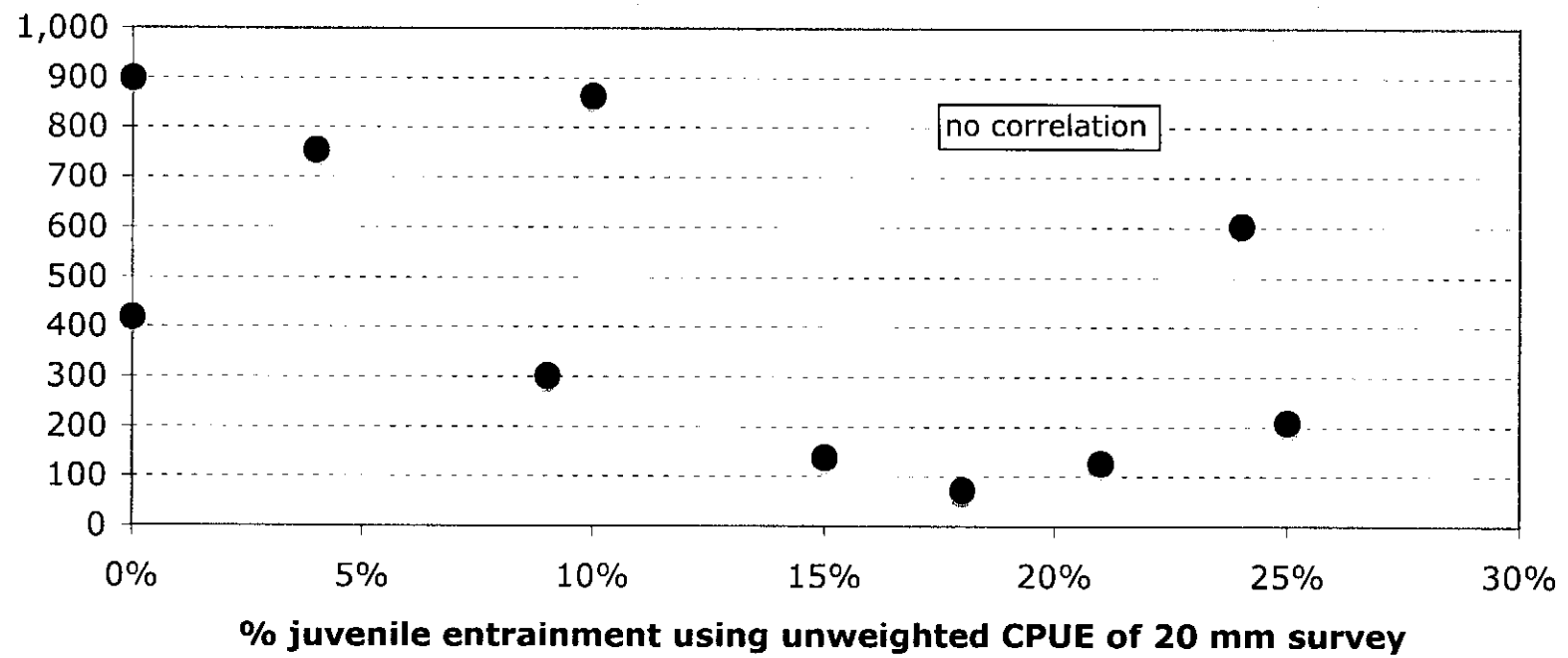


● residuals, stn vs. previous fmwt ○ stn

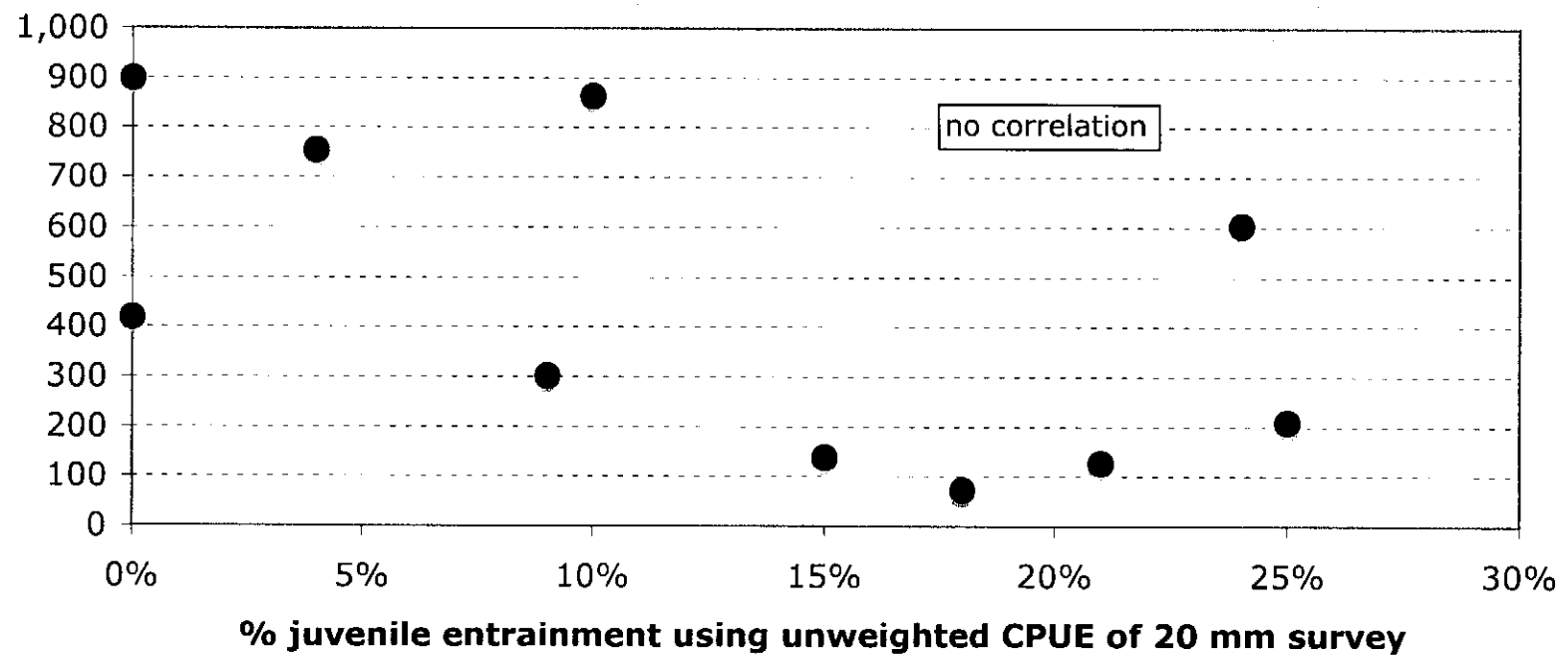
**relationship of % juvenile entrainment to that part of
variability in juvenile abundance not explained by
previous sub-adult abundance**



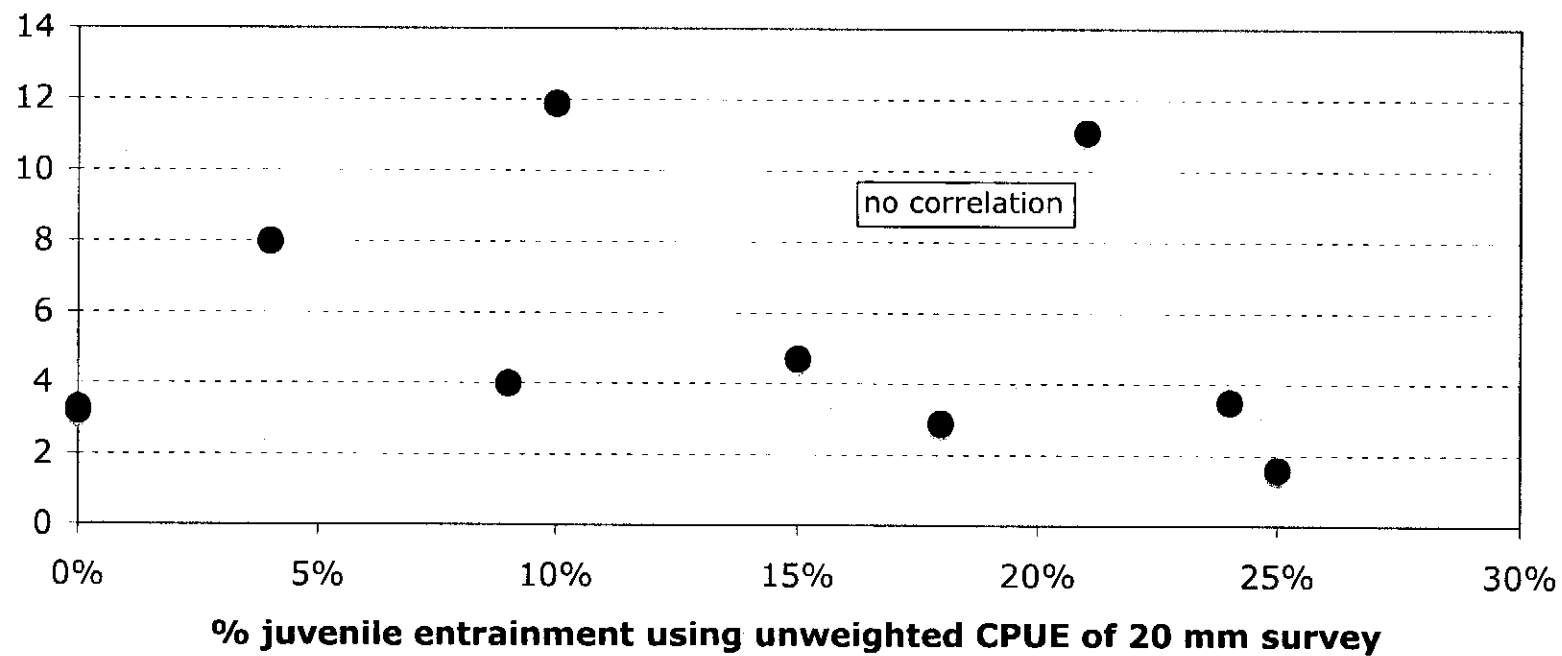
**relationship of sub-adult abundance
(fall midwater trawl index) to % juvenile entrapment**



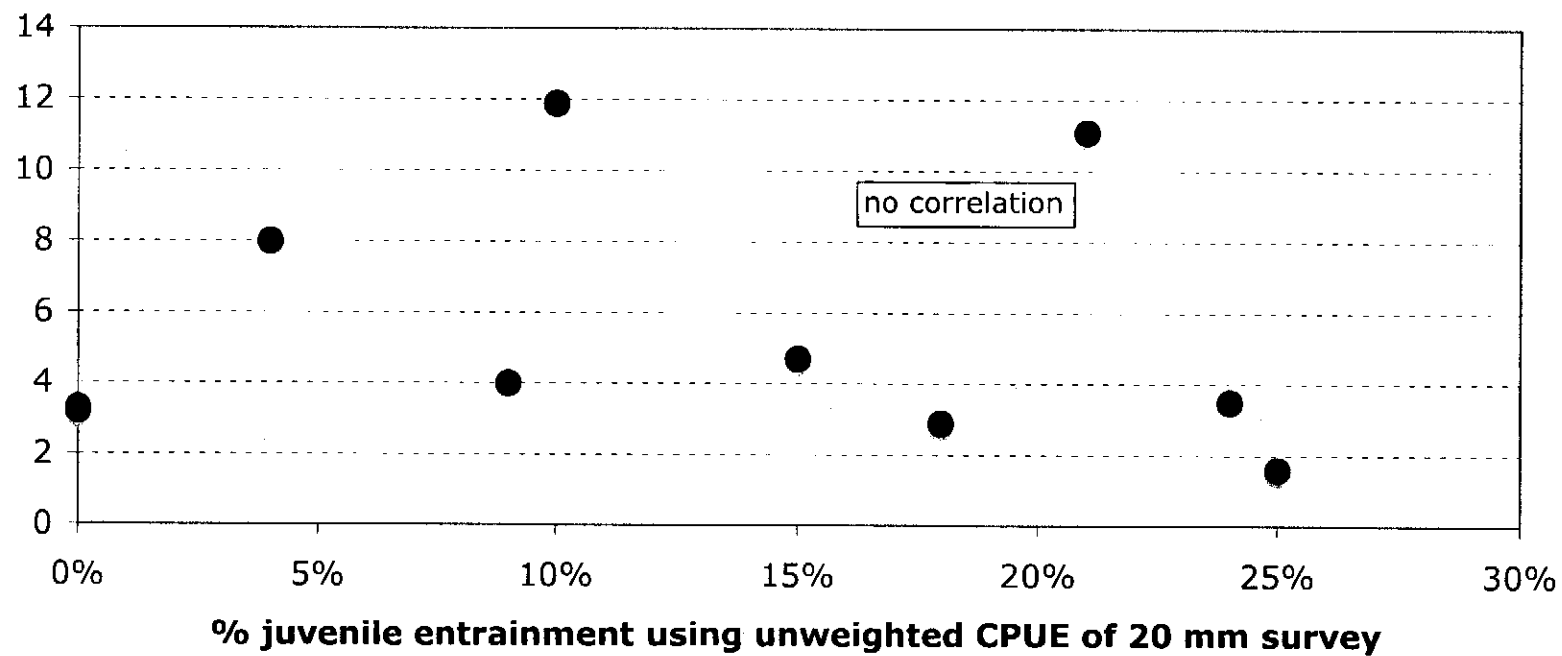
**relationship of sub-adult abundance
(fall midwater trawl index) to % juvenile entrapment**



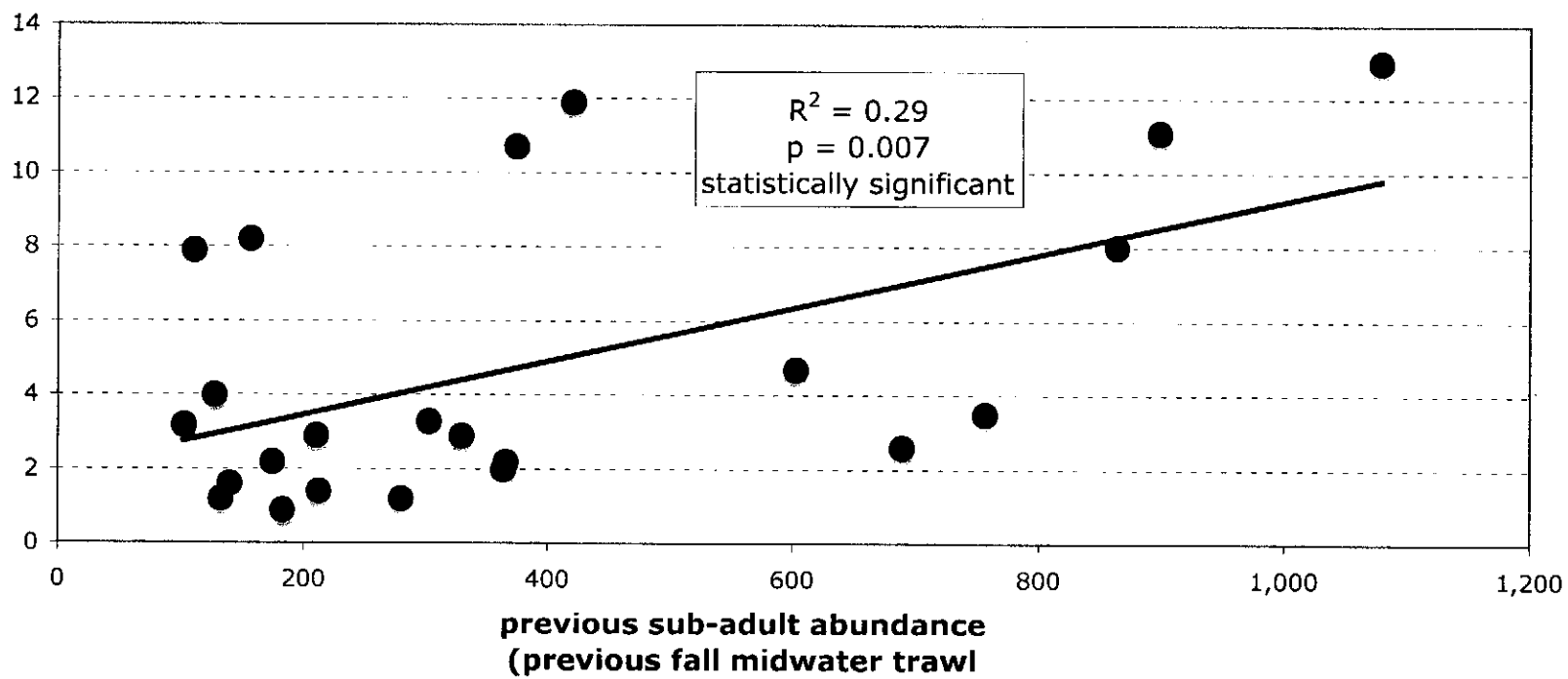
**relationship of juvenile abundance (summer townet index) to
% juvenile entrainment**



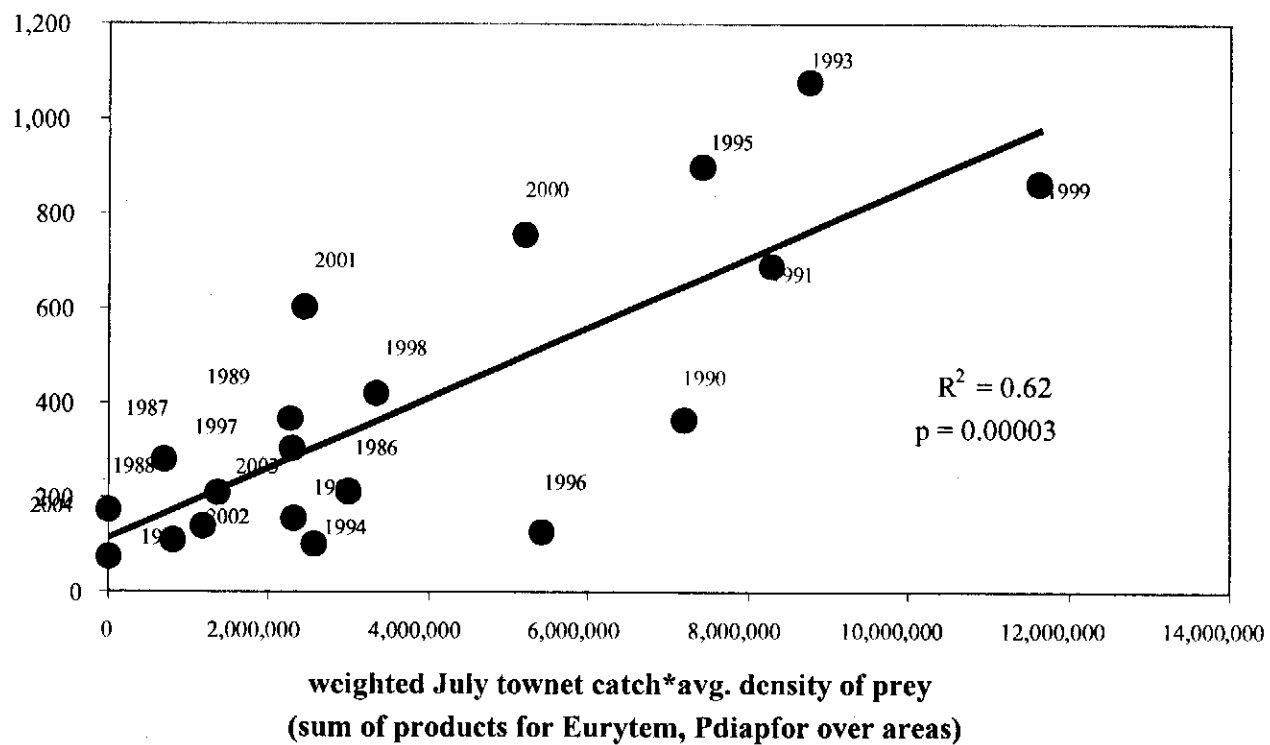
**relationship of juvenile abundance (summer townet index) to
% juvenile entrainment**



**relationship of juvenile abundance
to previous sub-adult abundance**



FMWT vs. smelt-prey co-occurrence

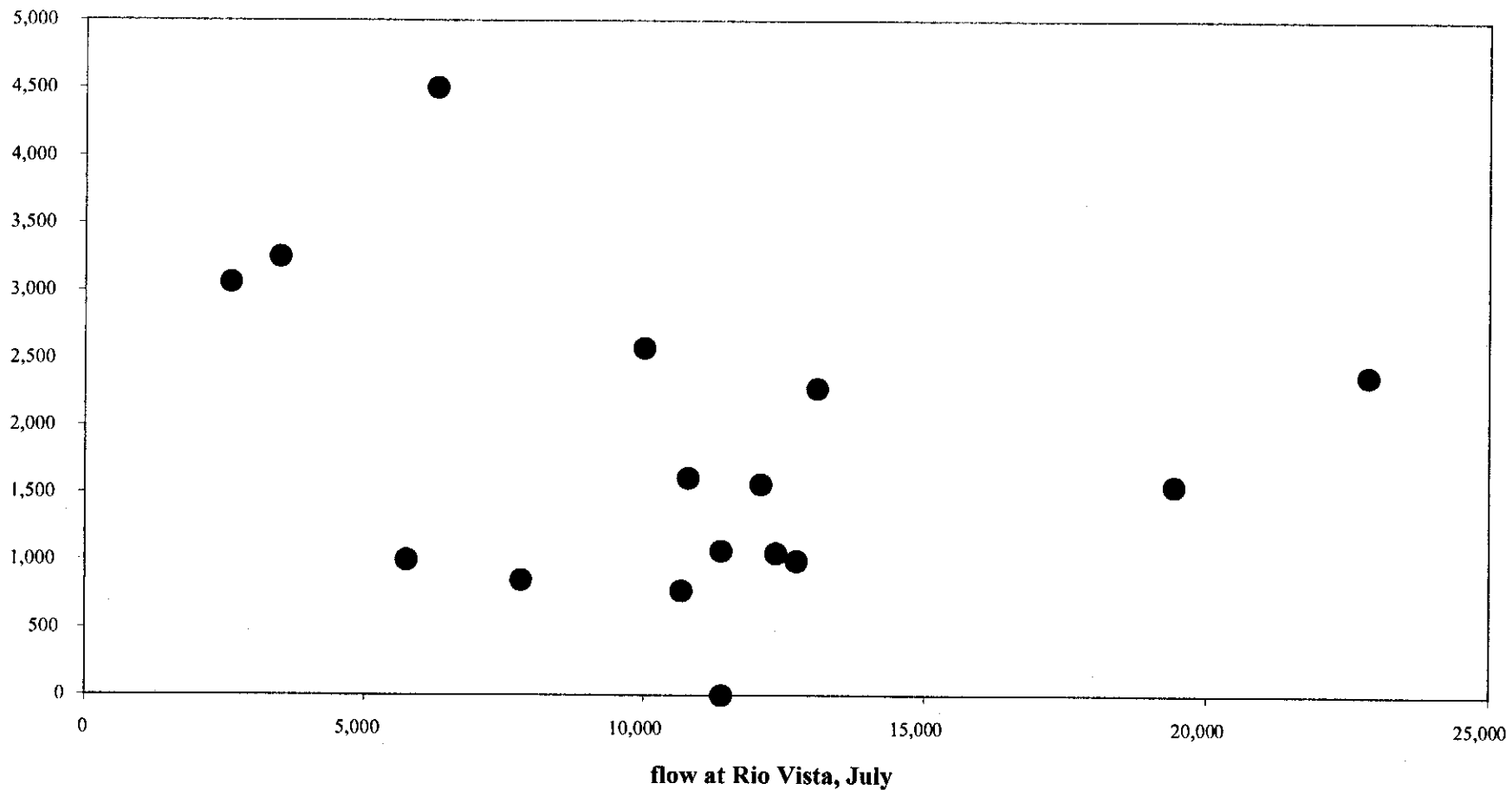


co-occurrence products, smelt abundance and prey density

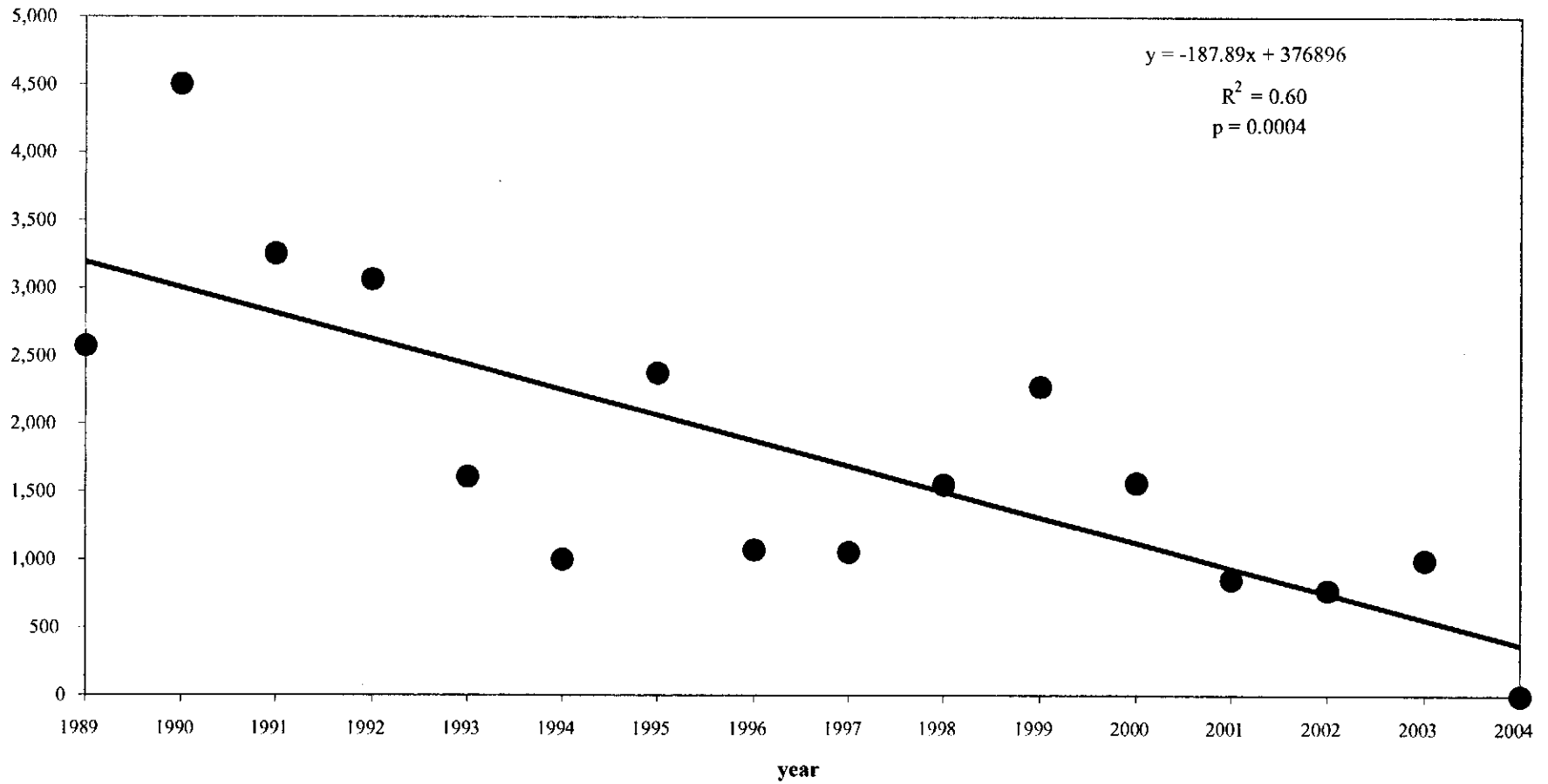
year	San Pablo Bay	Carquinez St.	Suisun Bay	Suisun Marsh	Chippis Is.	Lower Sac. R.	Lower SJR	nr Franks Tract	E-SE Delta	SE Delta
1985	0	0	0	0	440,690	344,045	30,664	0	0	0
1986	0	0	450,941	14,533	1,242,206	1,267,601	21,035	0	0	0
1987	0	0	0	5,518	0	604,187	88,799	2,195	0	0
1988	0	0	0	0	0	0	0	0	0	0
1989	0	0	163,253	397,592	0	1,681,362	0	0	0	24,771
1990	0	0	63,145	0	51,242	6,110,920	964,590	0	0	0
1991	0	0	0	0	74,938	7,207,645	920,136	64,015	0	0
1992	0	0	11,392	0	504,997	1,485,621	314,314	0	0	0
1993	0	3,049	907,585	27,597	1,895,987	3,324,685	2,588,521	0	0	0
1994	0	0	11,070	5,630	29,798	2,490,736	0	0	27,957	0
1995	0	0	6,404,571	75,496	680,357	253,148	0	0	0	0
1996	0	0	112,081	1,436,198	643,081	1,538,178	1,688,019	0	0	0
1997	0	0	288,588	0	629,147	1,237,496	136,774	0	0	0
1998	0	18,940	1,956,598	1,021,038	70,601	82,325	188,754	0	0	0
1999	0	0	1,471,853	444,747	4,418,652	4,446,508	647,666	189,416	0	0
2000	0	0	157,713	405,110	676,491	3,629,136	340,656	0	0	0
2001	0	0	12,533	2,581	0	2,431,670	0	0	0	0
2002	0	0	10,244	0	44,512	993,401	136,284	0	0	0
2003	0	0	1,399	4,810	259,573	899,270	203,891	0	0	0
2004	0	0	0	0	0	0	0	0	0	0

The sum of these products by year is the abscissa of the finwt vs. co-occurrence graph

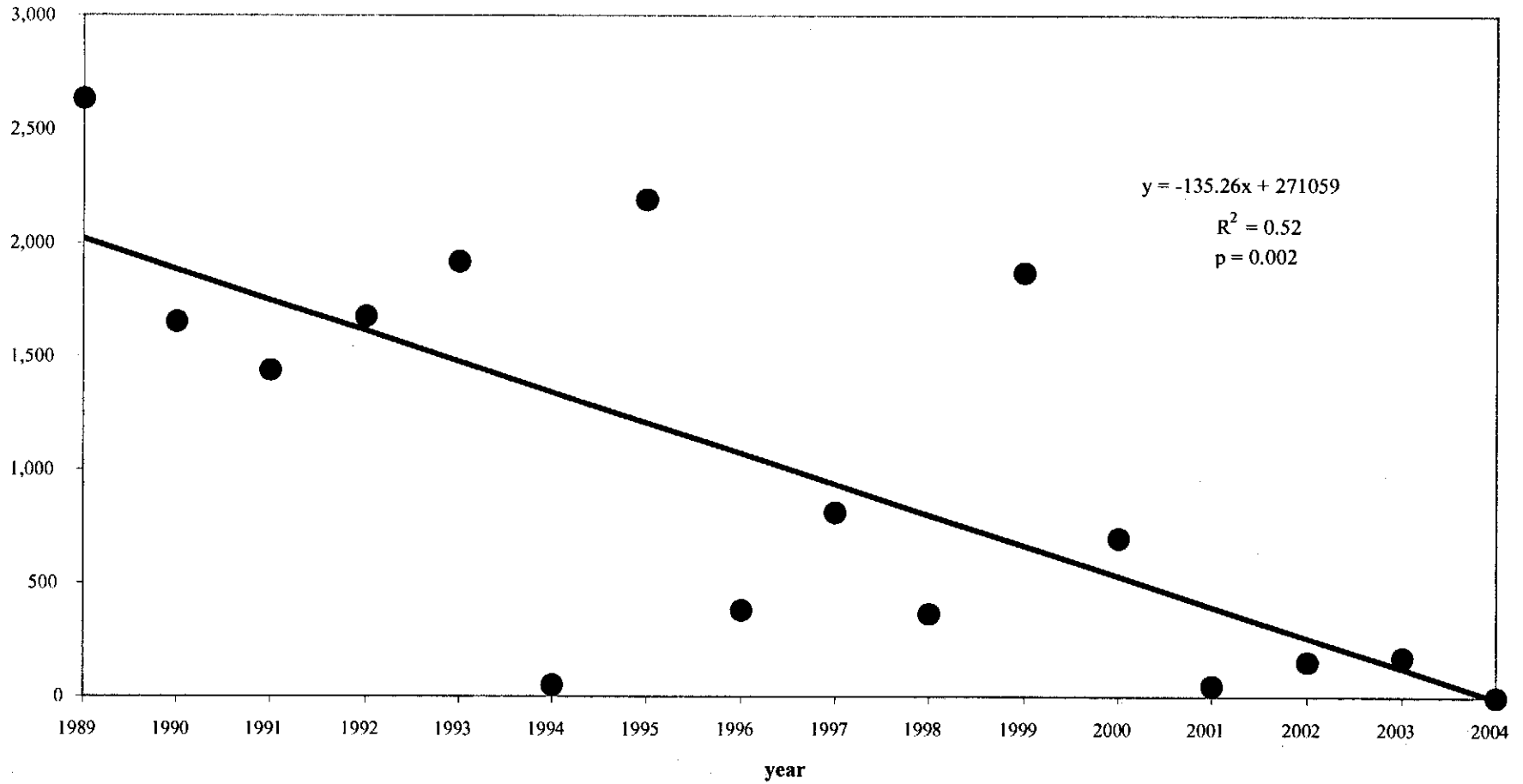
lower Sac. R. pseudodiaptomus



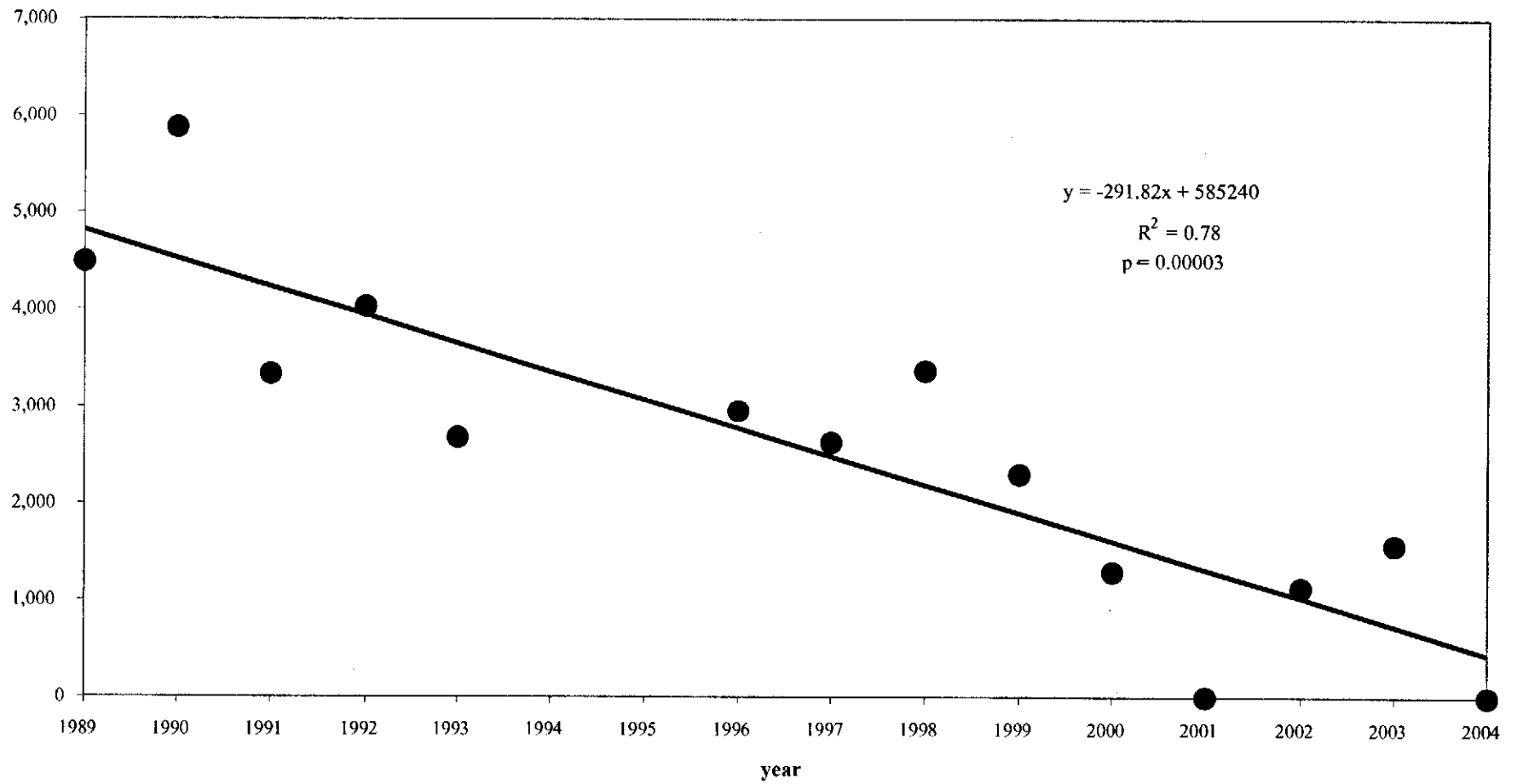
lower Sac. R. pseudodiptomus



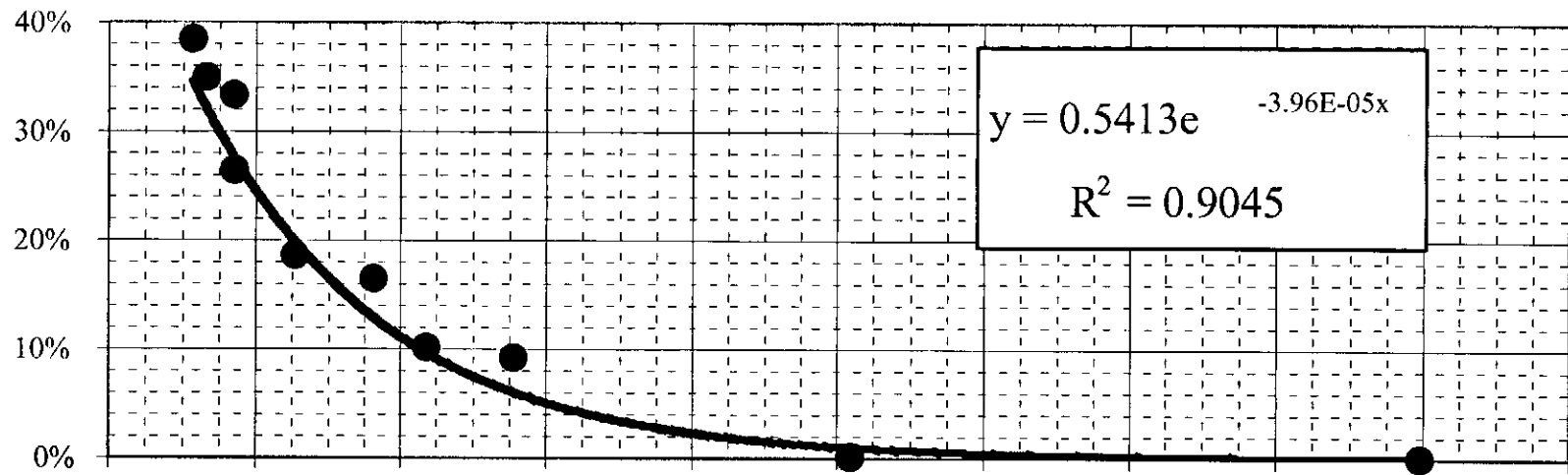
Chipps Island pseudodiaptomus



lower San Joaquin R. pseudodiaptomus

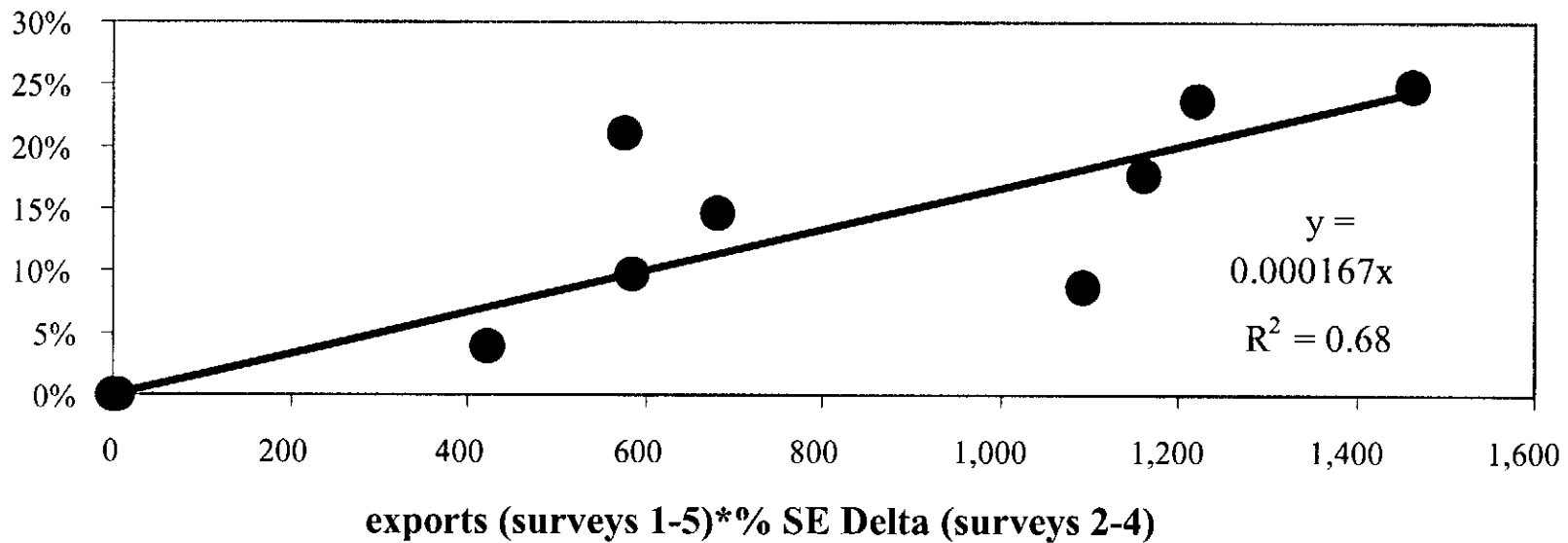


**% delta smelt in SE Delta vs. Delta outflow
unweighted cpue**



average Delta outflow, mid-March to mid-April, cfs

**annual % juvenile entrainment vs. exports*% SE Delta
cpue**



average target export for first five 20 mm surveys (Apr-May), cfs*

mid-Mar to mid-Apr Delta outflow cfs	target annual % juvenile entrainment								
	4%	6%	8%	10%	12%	14%	16%	18%	20%
6,000	745	1,118	1,491	1,863	2,236	2,608	2,981	3,354	3,726
8,000	801	1,201	1,602	2,002	2,403	2,803	3,204	3,604	4,005
10,000	861	1,291	1,721	2,152	2,582	3,012	3,443	3,873	4,304
12,000	925	1,387	1,850	2,312	2,775	3,237	3,700	4,162	4,625
14,000	994	1,491	1,988	2,485	2,982	3,479	3,976	4,473	4,970
16,000	1,068	1,602	2,136	2,671	3,205	3,739	4,273	4,807	5,341
18,000	1,148	1,722	2,296	2,870	3,444	4,018	4,592	5,166	5,740
20,000	1,234	1,851	2,467	3,084	3,701	4,318	4,935	5,552	6,168
22,000	1,326	1,989	2,652	3,314	3,977	4,640	5,303	5,966	6,629
24,000	1,425	2,137	2,849	3,562	4,274	4,987	5,699	6,411	7,124
26,000	1,531	2,297	3,062	3,828	4,593	5,359	6,124	6,890	7,656
28,000	1,645	2,468	3,291	4,114	4,936	5,759	6,582	7,404	8,227
30,000	1,768	2,652	3,537	4,421	5,305	6,189	7,073	7,957	8,841
32,000	1,900	2,850	3,801	4,751	5,701	6,651	7,601	8,551	9,501
34,000	2,042	3,063	4,084	5,105	6,126	7,147	8,169	9,190	10,211
36,000	2,195	3,292	4,389	5,486	6,584	7,681	8,778	9,876	10,973
38,000	2,358	3,538	4,717	5,896	7,075	8,254	9,434	10,613	11,792
40,000	2,534	3,802	5,069	6,336	7,603	8,871	10,138	11,405	12,672
42,000	2,724	4,086	5,447	6,809	8,171	9,533	10,895	12,257	13,619
44,000	2,927	4,391	5,854	7,318	8,781	10,245	11,708	13,172	14,635
46,000	3,146	4,718	6,291	7,864	9,437	11,009	12,582	14,155	15,728
48,000	3,380	5,071	6,761	8,451	10,141	11,831	13,522	15,212	16,902
50,000	3,633	5,449	7,266	9,082	10,898	12,715	14,531	16,347	18,164
52,000	3,904	5,856	7,808	9,760	11,712	13,664	15,616	17,568	19,520
54,000	4,195	6,293	8,391	10,489	12,586	14,684	16,782	18,879	20,977
56,000	4,509	6,763	9,017	11,272	13,526	15,780	18,035	20,289	22,543
58,000	4,845	7,268	9,690	12,113	14,536	16,958	19,381	21,804	24,226
60,000	5,207	7,810	10,414	13,017	15,621	18,224	20,828	23,441	26,035
62,000	5,596	8,394	11,191	13,987	16,787	19,585	22,381	25,181	27,978
64,000	6,013	9,020	12,027	15,031	18,040	21,047	24,054	27,060	30,067
66,000	6,462	9,694	12,925	16,157	19,387	22,618	25,849	29,081	32,312
68,000	6,945	10,417	13,889	17,367	20,834	24,307	27,771	31,251	34,724
70,000	7,463	11,195	14,927	18,653	22,380	26,112	29,833	33,585	37,316
72,000	8,020	12,031	16,041	20,021	24,061	28,072	32,082	36,092	40,102
74,000	8,619	12,929	17,238	21,541	25,857	30,161	34,471	38,786	43,096
76,000	9,263	13,894	18,522	23,157	27,781	32,419	37,051	41,682	46,312
78,000	9,954	14,931	19,898	24,886	29,863	34,846	39,811	44,794	49,760
80,000	10,697	16,046	21,375	26,741	32,092	37,441	42,789	48,138	53,487

*maximum export rate is about 13,000 cfs unless constrained by considerations other than delta smelt

TABLE A

D1641 (1968-1975 Level of Development, average=1971.5)																	
Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location [a]																	
PMI [b] (TAF)	Chippis Island (Chippis Island Station D10)					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]				
	FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0	0	0	0	0	0	0	5250	27	29	25	26	6
750	0	0	0	0	0	250	1	0	0	0	0	5500	27	29	26	28	9
1000	28 [c]	12	2	0	0	500	4	1	0	0	0	5750	27	29	27	28	13
1250	28	31	6	0	0	750	8	2	0	0	0	6000	27	29	27	29	16
1500	28	31	13	0	0	1000	12	4	0	0	0	6250	27	30	27	29	19
1750	28	31	20	0	0	1250	15	6	1	0	0	6500	27	30	28	30	22
2000	28	31	25	1	0	1500	18	9	1	0	0	6750	27	30	28	30	24
2250	28	31	27	3	0	1750	20	12	2	0	0	7000	27	30	28	30	26
2500	28	31	29	11	1	2000	21	15	4	0	0	7250	27	30	28	30	27
2750	28	31	29	20	2	2250	22	17	5	1	0	7500	27	30	29	30	28
3000	28	31	30	27	4	2500	23	19	8	1	0	7750	27	30	29	31	28
3250	28	31	30	29	8	2750	24	21	10	2	0	8000	27	30	29	31	29
3500	28	31	30	30	13	3000	25	23	12	4	0	8250	28	30	29	31	29
3750	28	31	30	31	18	3250	25	24	14	6	0	8500	28	30	29	31	29
4000	28	31	30	31	23	3500	25	25	16	9	0	8750	28	30	29	31	30
4250	28	31	30	31	25	3750	26	26	18	12	0	9000	28	30	29	31	30
4500	28	31	30	31	27	4000	26	27	20	15	0	9250	28	30	29	31	30
4750	28	31	30	31	28	4250	26	27	21	18	1	9500	28	31	29	31	30
5000	28	31	30	31	29	4500	26	28	23	21	2	9750	28	31	29	31	30
5250	28	31	30	31	29	4750	27	28	24	23	3	10000	28	31	30	31	30
5500	28	31	30	31	30	5000	27	28	25	25	4	>10000	28	31	30	31	30

[a] The requirement for number of days the maximum daily average electrical conductivity (EC) of 2.64 mmhos per centimeter (mmhos/cm) must be maintained at Chippis Island and Port Chicago can also be met with maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOIs of 11,400 cfs and 29,200 cfs, respectively. If salinity/flow objectives are met for a greater number of days than the requirements for any month, the excess days shall be applied to meeting the requirements for the following month. The number of days for values of the PMI between those specified in this table shall be determined by linear interpolation.

[b] PMI is the best available estimate of the previous month's Eight River Index. (Refer to Footnote 13 for Table 3 for a description of the Eight River Index.)

[c] When the PMI is between 800 TAF and 1000 TAF, the number of days the maximum daily average EC of 2.64 mmhos/cm (or maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOI of 11,400 cfs) must be maintained at Chippis Island in February is determined by linear interpolation between 0 and 28 days.

[d] This standard applies only in months when the average EC at Port Chicago during the 14 days immediately prior to the first day of the month is less than or equal to 2.64 mmhos/cm.

TABLE B

Bay Institute Proposed 1956-1968 (AVE. 1962) Level of Development																	
Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location [a]																	
PMI [b] (TAF)	Chippis Island (Chippis Island Station D10)					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]				
	FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0	0	0	0	0	0	0	5250	27	29	27	29	16
750	0	0	0	0	0	250	1	0	0	0	0	5500	27	30	28	29	20
1000	28[c]	31	3	0	0	500	4	1	0	0	0	5750	27	30	28	30	23
1250	28	31	9	0	0	750	8	3	0	0	0	6000	27	30	28	30	25
1500	28	31	17	0	0	1000	12	5	1	0	0	6250	27	30	29	30	27
1750	28	31	23	1	0	1250	15	9	1	0	0	6500	27	30	29	30	28
2000	28	31	27	4	0	1500	18	12	3	0	0	6750	27	30	29	31	28
2250	28	31	28	13	1	1750	20	15	4	0	0	7000	27	30	29	31	29
2500	28	31	29	23	3	2000	21	18	7	1	0	7250	27	30	29	31	29
2750	28	31	30	29	7	2250	22	20	9	2	0	7500	27	30	29	31	29
3000	28	31	30	30	12	2500	23	22	12	3	0	7750	27	30	29	31	30
3250	28	31	30	31	18	2750	24	24	15	5	0	8000	27	31	29	31	30
3500	28	31	30	31	23	3000	25	25	17	8	0	8250	28	31	30	31	30
3750	28	31	30	31	26	3250	25	26	19	12	0	8500	28	31	30	31	30
4000	28	31	30	31	28	3500	25	27	21	15	0	8750	28	31	30	31	30
4250	28	31	30	31	29	3750	26	27	23	19	1	9000	28	31	30	31	30
4500	28	31	30	31	29	4000	26	28	24	22	2	9250	28	31	30	31	30
4750	28	31	30	31	30	4250	26	28	25	24	3	9500	28	31	30	31	30
5000	28	31	30	31	30	4500	26	29	26	26	6	9750	28	31	30	31	30
5250	28	31	30	31	30	4750	27	29	26	27	9	10000	28	31	30	31	30
³ 5500	28	31	30	31	30	5000	27	29	27	28	13	>10000	28	31	30	31	30

[a] The requirement for number of days the maximum daily average electrical conductivity (EC) of 2.64 mmhos per centimeter (mmhos/cm) must be maintained at Chippis Island and Port Chicago can also be met with maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOIs of 11,400 cfs and 29,200 cfs, respectively. If salinity/flow objectives are met for a greater number of days than the requirements for any month, the excess days shall be applied to meeting the requirements for the following month. The number of days for values of the PMI between those specified in this table shall be determined by linear interpolation.

[b] PMI is the best available estimate of the previous month's Eight River Index. (Refer to Footnote 13 for Table 3 for a description of the Eight River Index.)

[c] When the PMI is between 800 TAF and 1000 TAF, the number of days the maximum daily average EC of 2.64 mmhos/cm (or maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOI of 11,400 cfs) must be maintained at Chippis Island in February is determined by linear interpolation between 0 and 28 days.

[d] This standard applies only in months when the average EC at Port Chicago during the 14 days immediately prior to the first day of the month is less than or equal to 2.64 mmhos/cm.

TABLE C

Additional number of days required between Table A (D1641) and Table B (1956-1968 LOD)																	
Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location [a]																	
PMI [b] (TAF)	Chippis Island (Chippis Island Station D10)					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]				
	FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0	0	0	0	0	0	0	5250	0	0	2	3	10
750	0	0	0	0	0	250	0	0	0	0	0	5500	0	1	2	1	11
1000	0	19	1	0	0	500	0	0	0	0	0	5750	0	1	1	2	10
1250	0	0	3	0	0	750	0	1	0	0	0	6000	0	1	1	1	9
1500	0	0	4	0	0	1000	0	1	1	0	0	6250	0	0	2	1	8
1750	0	0	3	1	0	1250	0	3	0	0	0	6500	0	0	1	0	6
2000	0	0	2	3	0	1500	0	3	2	0	0	6750	0	0	1	1	4
2250	0	0	1	10	1	1750	0	3	2	0	0	7000	0	0	1	1	3
2500	0	0	0	12	2	2000	0	3	3	1	0	7250	0	0	1	1	2
2750	0	0	1	9	5	2250	0	3	4	1	0	7500	0	0	0	1	1
3000	0	0	0	3	8	2500	0	3	4	2	0	7750	0	0	0	0	2
3250	0	0	0	2	10	2750	0	3	5	3	0	8000	0	1	0	0	1
3500	0	0	0	1	10	3000	0	2	5	4	0	8250	0	1	1	0	1
3750	0	0	0	0	8	3250	0	2	5	6	0	8500	0	1	1	0	1
4000	0	0	0	0	5	3500	0	2	5	6	0	8750	0	1	1	0	0
4250	0	0	0	0	4	3750	0	1	5	7	1	9000	0	1	1	0	0
4500	0	0	0	0	2	4000	0	1	4	7	2	9250	0	1	1	0	0
4750	0	0	0	0	2	4250	0	1	4	6	2	9500	0	0	1	0	0
5000	0	0	0	0	1	4500	0	1	3	5	4	9750	0	0	1	0	0
5250	0	0	0	0	1	4750	0	1	2	4	6	10000	0	0	0	0	0
5500	0	0	0	0	0	5000	0	1	2	3	9	>10000	0	0	0	0	0

[a] The requirement for number of days the maximum daily average electrical conductivity (EC) of 2.64 mmhos per centimeter (mmhos/cm) must be maintained at Chippis Island and Port Chicago can also be met with maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOIs of 11,400 cfs and 29,200 cfs, respectively. If salinity/flow objectives are met for a greater number of days than the requirements for any month, the excess days shall be applied to meeting the requirements for the following month. The number of days for values of the PMI between those specified in this table shall be determined by linear interpolation.

[b] PMI is the best available estimate of the previous month's Eight River Index. (Refer to Footnote 13 for Table 3 for a description of the Eight River Index.)

[c] When the PMI is between 800 TAF and 1000 TAF, the number of days the maximum daily average EC of 2.64 mmhos/cm (or maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOI of 11,400 cfs) must be maintained at Chippis Island in February is determined by linear interpolation between 0 and 28 days.

[d] This standard applies only in months when the average EC at Port Chicago during the 14 days immediately prior to the first day of the month is less than or equal to 2.64 mmhos/cm.